

ARSENIC STATISTICS

By David A. Buckingham and Robert G. Reese, Jr.

[All values are in metric tons (t) unless otherwise noted]

Year	Production	Shipments	Imports	Exports	Stocks	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1900			1,980			1,980	133.96	2,600	6,167
1901	206		2,400			2,606	114.16	2,200	5,189
1902	929		2,785			3,027	92.91	1,800	5,341
1903	420		2,870			3,289	96.10	1,700	3,824
1904	25		2,335			2,360	99.02	1,800	3,500
1905	518		2,636			3,154	103.98	1,900	13,118
1906	506		2,738			3,244	189.30	3,400	
1907	1,202		3,547			4,749	135.42	2,400	
1908			3,525			3,920	125.23	2,300	
1909	834		2,252			3,086	109.50	2,000	
1910	1,028		2,980			1,954	80.09	1,400	6,813
1911	2,151		2,497			3,470	87.37	1,500	12,752
1912	2,157		3,786			4,288	101.93	1,700	27,631
1913	1,726		2,767	23		2,769	127.56	2,100	13,445
1914	3,207		2,197	0.26		4,302.00	109.21	1,770	11,462
1915	3,776		1,927	4		4,737.00	116.49	1,870	13,275
1916	4,111		1,328	0.66		4,846.00	176.49	2,630	13,304
1917	4,224	4,224	2,314	43		5,033.00	407.73	5,190	16,428
1918	4,342	4,342	3,893	30		5,611.00	349.47	3,780	23,161
1919	4,140	4,140	4,179			7,154.00	291.23	2,750	19,034
1920	7,899	7,899	4,780	5		10,467.00	411.51	3,350	27,875
1921	4,229	3,287	2,958	9		4,433.00	222.21	2,020	16,225
1922	6,421	6,886	2,832	5		7,628.00	313.08	3,040	23,461
1923	10,234	9,800	7,690			16,772.00	356.76	3,400	47,286
1924	13,856	9,925	6,279			16,022.00	291.23	2,770	47,169
1925	8,323	8,459	6,741			14,856.00	142.71	1,320	50,304
1926	4,642	8,107	5,524			13,397.00	93.20	855	41,056
1927	8,055	7,939	8,824			16,535.00	109.21	1,020	39,863
1928	9,726	8,081	7,886	458		15,740.00	116.49	1,110	43,241
1929	11,403	9,989	9,282	948		19,025.00	116.49	1,110	45,994
1930	11,714	11,966	7,606	1,098		19,157.00	116.49	1,140	49,617
1931	11,769	9,461	5,536	1,754		13,850.00	116.49	1,250	51,024
1932	8,724	8,573	4,886	2,124		11,925.00	116.49	1,390	51,477
1933	7,314	8,101	7,500	2,015		13,996.00	116.49	1,470	27,252
1934	8,994	10,729	9,895	2,662		18,565.00	109.21	1,330	38,153
1935	9,777	8,701	10,613	1,610		18,504.00	101.93	1,210	41,559
1936	10,561	10,700	12,376	2,122		22,090.00	101.93	1,200	42,165
1937	11,547	12,111	13,592	2,806		22,451.00	94.65	1,070	42,392
1938	11,458	9,037	9,951	2,819		17,236.00	87.37	1,010	52,233
1939	15,342	15,410	10,605	3,884	3,780	23,289.00	87.37	1,030	42,771
1940	17,157	16,028	6,976	2,693	4,768	21,748.00	101.93	1,190	40,424
1941	22,306	23,888	7,323	4,232	3,103	29,846.00	116.49	1,290	45,950
1942	19,696	21,315	11,231	1,123	1,502	32,334.00	116.49	1,170	47,691
1943	21,428	22,266	11,095	3,259	781	31,975.00	116.49	1,100	50,188
1944	24,787	23,673	6,853	2,994	1,896	28,868.00	116.49	1,080	51,825
1945	16,721	17,038	9,657	2,572	1,579	26,165.00	116.49	1,060	42,089
1946	7,012	8,268	9,557	2,636	323	17,072.00	145.61	1,210	31,794
1947	12,880	12,490	9,617	2,313	713	21,377.00	174.74	1,280	42,392
1948	12,800	10,277	6,459	1,332	3,236	16,688.00	178.52	1,210	40,878
1949	8,787	6,992	3,258	989	5,031	10,217.00	160.17	1,100	26,495
1950	9,115	11,901	10,318	987	1,702	22,047.00	167.46	1,130	35,710
1951	11,118	9,855	10,463	1,206	3,319	19,825.00	189.30	1,190	47,385
1952	10,763	6,348	3,190	1,181	7,735	9,427.00	174.74	1,070	37,084

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1953	7,467	7,770	3,324	845	7,431	11,010.00	160.17	977	20,602
1954	9,042	7,913	3,427	541	8,559	11,243.00	160.17	971	26,096
1955	7,403	8,016	5,124	598	7,946	12,976.00	160.17	977	30,903
1956	8,379	12,963	4,531	643	3,315	17,373.00	160.17	959	33,650
1957	7,206	8,780	7,099	805	1,741	15,740.00	160.17	926	30,903
1958	7,903	7,507	6,637	678	2,137	14,047.00	160.17	905	27,470
1959	3,563	4,971	13,393	307	727	18,284.00	131.06	732	32,139
1960	9,400		8,925	439		17,886.00	131.06	720	39,350
1961	1,854		13,498	322		15,030.00	116.49	633	40,518
1962	2,060		10,995	477		12,578.00	116.49	630	34,062
1963	1,717		10,216	199		11,734.00	148.53	790	36,642
1964	4,797		12,708	687	3,159	16,818.00	152.89	805	39,935
1965	7,663		10,913		1,030	20,705.00	166.00	856	38,602
1966	5,857		13,119		893	19,113.00	146.49	736	39,467
1967	3,115		19,068		687	22,389.00	166.00	810	44,553
1968	3,800		17,704		275	21,916.00	178.52	838	46,386
1969	6,417		12,830		1,579	17,943.00	189.30	841.7	37,738
1970	9,900		13,351		4,395	20,435.00	189.30	794.7	37,501
1971	4,673		12,422		8,172	13,318.00	189.30	762.1	37,762
1972	6,417		10,047		9,340	15,296.00	189.30	737.7	31,361
1973	6,387		9,959		10,026	15,660.00	189.30	694.4	35,152
1974	4,601		10,150		7,279	17,498.00	378.60	1,252	37,189
1975	5,082		8,719		1,579	19,501.00	381.52	1,156	30,669
1976	4,532		3,372		1,992	7,491.00	381.52	1,093	26,110
1977	3,365		5,088		2,060	8,385.00	381.52	1,026	23,201
1978	3,983		7,913	232	206	13,518.00	677.11	1,692	23,329
1979	4,532		8,950	734	69	12,885.00	706.24	1,586	22,422
1980	3,400		9,000	1,149		11,320.00	924.66	1,830	23,618
1981	4,052		14,270	396	69	17,857.00	1,164.93	2,088	33,104
1982	8,000		12,069	2,012	1,514	16,200.00	1,164.93	1,967	34,498
1983	7,300		10,090	64	2,347	13,600.00	961.07	1,573	31,889
1984	6,800		13,881	58	2,498	17,300.00	961.07	1,509	35,632
1985	2,200		15,305	120	681	18,100.00	961.07	1,457	40,299
1986			21,475	164	280	21,100.00	961.07	1,429	39,588
1987			22,356	50	174	21,900.00	1,048.43	1,504	47,227
1988			22,435	120	76	22,300.00	961.07	1,325	40,424
1989			22,456	126	76	22,300.00	786.33	1,034	49,430
1990			20,706	149	76	20,500.00	669.83	835.6	40,424
1991			21,977	233		21,600.00	728.08	871.3	34,822
1992			24,064	94		23,900.00	844.57	981.3	34,671
1993			21,667	364		21,300.00	757.20	854.5	31,870
1994			21,633	79		21,500.00	931.94	1,025	35,428
1995			22,657	430		22,300.00	961.07	1,028	35,579
1996			21,453	36		21,400.00	961.07	998.7	32,551
1997			23,780	61		23,700.00	902.81	916.9	31,567
1998			30,297	177		30,100.00	931.94	931.9	30,886

Arsenic Worksheet Notes

Data Sources

Sources of data for the arsenic worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB) and its predecessor, Mineral Resources of the United States (MR); the Mineral Commodity Summaries (MCS) and its predecessor, Commodity Data Summaries (CDS); and Minerals Facts and Problems (MFP). Years of publication and corresponding years of data coverage are listed in the References section below. In addition, some data came from U.S. Bureau of Mines Information Circular 9382 (Loebenstein, 1994). Blank cells in the worksheet indicate that data are not available.

Production

Domestic production is defined as crude and refined arsenic reported in terms of arsenic content. Production data were not available for the years 1900 and 1908. Domestic arsenic production ceased after 1985. Data for the years 1960, 1970, and 1980 came from Loebenstein (1994). Data for the years 1961–69 and 1971–79 are from the MFP. Other data are from the MR and the MYB.

Shipments

Domestic producer shipments are reported in terms of arsenic content. Data on shipments are not available prior to 1917 and after 1959. Data are from the MR and the MYB.

Imports

Data include arsenic metal, and the arsenic content of arsenic compounds such as trioxide (white arsenic), sulfides (mostly ore); calcium, lead, and sodium arsenic imports to the United States, excluding these compounds, arsenic green, arsenic purple, and sheep dip. Contained arsenic is calculated using the percentage of arsenic in each compound, when compounds are combined the average arsenic grade is used. Data are totaled on an annual basis. Data are from the MR and the MYB.

Exports

Data include the arsenic content of arsenic metal and ore, arsenic trioxide (white arsenic), calcium, and lead arsenic compounds exported from the United States. Contained arsenic is calculated using the percentage of arsenic in each compound, when compounds are combined the average arsenic grade is used. Data are totaled on an annual basis. Export data are not available prior to 1913, for the years 1919, 1923–27 and 1965–75. Data are withheld, for propriety reasons, for the years 1976–77. Data for the years 1976–86 and 1989–98 are from the MCS. All other data are from the MR and the MYB.

Stocks

Data are reported in terms of the arsenic content of producer stocks. Stock data are not available prior to 1939, for the years 1960–63, and 1991–98. Data for the years 1964–81 are from the MFP. All other data are from the MR and the MYB.

Apparent Consumption

Apparent consumption data for the arsenic spreadsheet are a combination of published and calculated consumption data. Apparent consumption is calculated for the years 1900, 1907, and 1909 using the following equation:

$$\text{APPARENT CONSUMPTION} = \text{PRODUCTION} + \text{IMPORTS} - \text{EXPORTS} \pm (\text{STOCK CHANGES})$$

If arsenic data for a particular category, other than apparent consumption, were unavailable, data were presumed to be zero in making the above calculation.

Apparent consumption is interpolated for the year 1908. Published apparent supply data are used for the years 1902–06. Published apparent consumption data are used for the years 1910–59 and 1984–98. These data are from the MR and the MYB. Published apparent demand data are used for the years 1960–83. These data are from the MFP.

Unit Value (\$/t)

Unit value is defined as the value of 1 metric ton (t) apparent consumption of arsenic content. Excluding the year 1908, data are estimated using the market price in U.S. dollars per ton of arsenic trioxide. Data for 1908 is the average of the 1908 market price range for arsenic trioxide. The market price of arsenic trioxide was converted to a value for the contained arsenic by dividing the arsenic trioxide price by the percentage of arsenic contained in arsenic trioxide (75.7%). Data are from the MR and the MYB.

Unit Value (98\$/t)

Data are calculated by dividing the unit value, previously determined, by the Consumer Price Index conversion factors with a base year of 1998. This results in a unit value in constant 1998 U.S. dollars.

World Production

Data are the world production of arsenic trioxide in terms of arsenic content. No data are available from 1906–09. Data are from the MR and the MYB.

References

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